

I claim:

1. A metallic armor assembly comprising a metallic facing element formed to have an effective density reduced by at least about 20% and a backing having at least one layer comprising a fiber composite substrate.
2. The metallic armor assembly of claim 1, wherein the metallic facing element comprises a plurality of perforations.
3. The metallic armor assembly of claim 2, wherein at least about 20% of the surface area of the metallic facing element is perforated.
4. The metallic armor assembly of claim 2, wherein the perforations have a diameter of between about 3.0 mm and about 3.5 mm.
5. The metallic armor assembly of claim 2, wherein the perforations have a diameter of between about 3.0 mm and about 3.5 mm and a spacing of between about 4.0 mm and about 4.5 mm.
6. The metallic armor assembly of claim 2, wherein the perforations have a diameter less than about 1.2 times a diameter of a core of a projectile that is to be defeated.
7. The metallic armor assembly of claim 6, wherein the perforations have a diameter less than about 0.9 times a diameter of a core of a projectile that is to be defeated.
8. The metallic armor assembly of claim 2, wherein the perforations are arranged to be spaced apart about between about 4.0 mm and about 4.5 mm edge-to-edge.
9. The metallic armor assembly of claim 1, wherein the metallic facing element comprises a plurality of projections.

10. The metallic armor assembly of claim 1, wherein the metallic facing element comprises a plurality of indentations.
11. The metallic armor assembly of claim 1, wherein the metallic facing element is corrugated.
12. The metallic armor assembly of claim 1, wherein the metallic facing element comprises a plurality of perforated metal plates.
13. The metallic armor assembly of claim 1, wherein the fiber composite substrate comprises fibers having a diameter, and wherein the ratio of thickness of at least one layer of the backing to an equivalent diameter of the fibers is no more than about 20.0.
14. The metallic armor assembly of claim 13, wherein the fiber composite substrate comprises fibers having a diameter, and wherein the ratio of thickness of at least one layer of the backing to the equivalent diameter of the fibers is between about 3.5 and about 10.0.
15. The metallic armor assembly of claim 1, wherein the fiber composite substrate comprises a plurality of fiber layers.
16. The metallic armor assembly of claim 15, wherein at least two fiber layers comprise fibers having a longitudinal axis arranged in a parallel array.
17. The metallic armor assembly of claim 16, wherein the at least two fiber layers are adjacent and the longitudinal axes of the fibers are aligned at 90 degree angles with respect to the longitudinal axes in adjacent layers.
18. The metallic armor assembly of claim 1, wherein the fiber composite substrate has an areal density of at least about 2.5 pounds per square foot.
19. The metallic armor assembly of claim 1, wherein the fiber composite substrate has a fiber content of at least about 75% by weight or by volume.

20. The metallic armor assembly of claim 1, further comprising an adhesive layer between the metallic facing element and the fiber composite substrate.
21. The metallic armor assembly of claim 1, further comprising a protective outer cover.
22. A small arms protective insert to provide a protective barrier against projectile penetration, comprising a metallic facing element formed to have an effective density reduced by at least about 20% and a backing layer comprising a fiber composite substrate.
23. The small arms protective insert of claim 22, wherein the metallic facing element comprises a plurality of perforations.
24. An armor plate for use as a small arms protective insert, comprising:
 - a. at least one metallic facing element having a thickness between about 0.02 inches and about 0.50 inches, a hardness no less than 30 on the Rockwell C scale, and at least about 20% perforated;
 - b. a backing portion comprising a fiber composite substrate with a thickness between about 0.06 inches and about 3.00 inches, the substrate having at least one layer comprising a network of filaments having a tensile modulus of at least about 150 g/denier, an energy to break of at least about 8 j/g, and a tenacity of at least about 7 g/denier, wherein the ratio of thickness of at least one substrate layer to an equivalent diameter of the filaments is no more than about 20.0;
 - c. an optional adhesive layer between the metallic facing element and the backing portion, the adhesive layer having a thickness of between about 0.0005 inches and about 0.090 inches; and
 - d. an optional protective outer cover for at least a portion of the metallic facing element or the backing portion.
25. An armor plate, comprising:
 - a. at least one metallic facing element;

- b. a backing portion comprising a fiber composite substrate, the substrate having at least one layer wherein the ratio of thickness of the layer to an equivalent diameter of the filaments is no more than about 20.0;

wherein a ratio of thickness of the backing portion to thickness of the metallic facing element is selected to be effective against a predetermined penetration threat.

- 26. The armor plate of claim 25, wherein the ratio of thickness of the backing portion to thickness of the metallic facing element is at least about 7.
- 27. The armor plate of claim 25, wherein the ratio of thickness of the backing portion to thickness of the metallic facing element is between about 4 and about 10.